

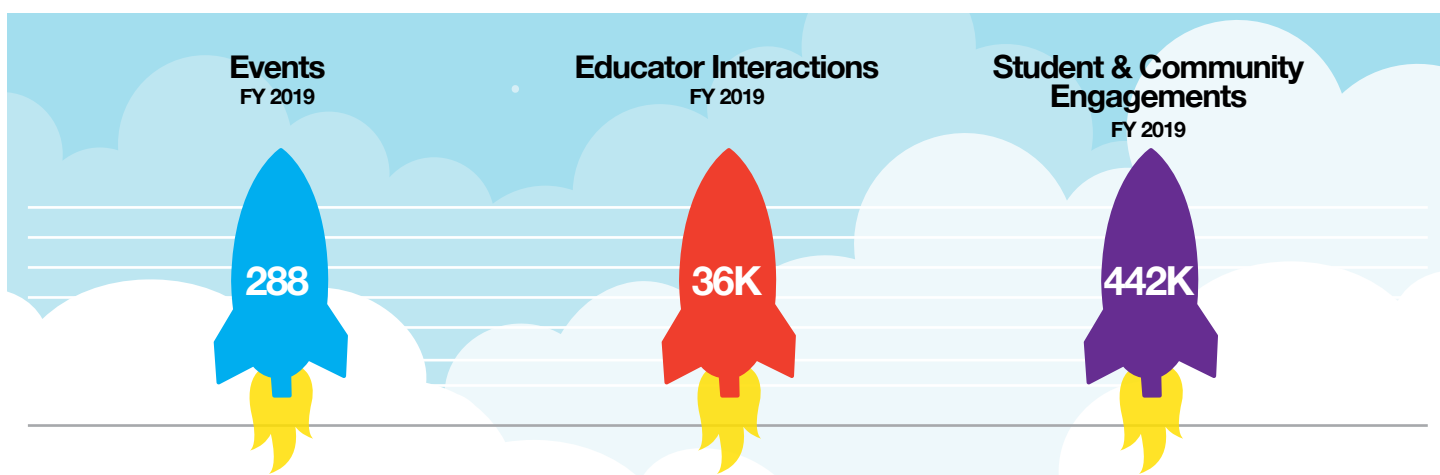
IDAHO
STEM
ACTION CENTER

Connecting STEM education and industry
for Idaho's successful economic future.



Engineering innovative opportunities for educators, students, communities, and industry to build a competitive Idaho workforce and economy through STEM and Computer Science education.

The STEM Action Center Impact



Idaho STEM Action Center, a statewide agency housed under the Office of the Governor, was created on July 1, 2015 through the work of visionary legislators, education leaders, and industry stakeholders. Idaho STEM Action Center develops unique grant, training, professional development and student opportunities aligned to Idaho's workforce needs from early childhood through career.

92%
OF IDAHO PARENTS
BELIEVE that their school should
INVEST MORE
in STEM education

Our Impact

In Idaho
STEM JOBS
are expected to grow
23% by 2024

PROFESSIONAL DEVELOPMENT

Over 45,000 students are impacted annually through our statewide i-STEM program

Idaho's STEM jobs
PAY WELL!
DOUBLE THE MEDIAN WAGE
of non-STEM JOBS.

In 2018, over
6,300 STEM JOBS
WERE UNFILLED IN IDAHO,
resulting in nearly
\$413 Million
of unclaimed personal income

Idaho is
2ND IN THE NATION
in implementing Code.org's
Computer Science education policy
recommendations

COMPUTER SCIENCE

Idaho is a leader in expanding computer science education, including implementation of a state plan, K-12 CS standards and professional development

Within 10 years,
80% OF JOBS
will require skills in
TECHNOLOGY

STUDENT COMPETITIONS

Participation has grown nearly 5X statewide for high school competitions since 2016

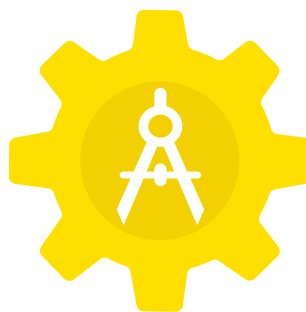
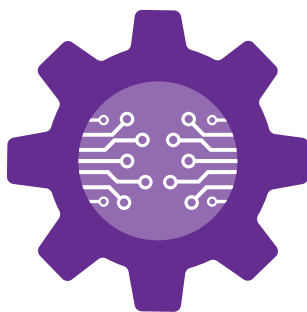
GRANTS

Idaho STEM Action Center awarded 714 grants in 2018 from 21 competitive grant and PD opportunities

99%
of parents believe that
STEM CAREERS
will play an important role
in the future



Each colored dot represents a different statewide STEM program. Colored pins represent MAJOR impacts.



Our Programs

Creating access to life-shaping STEM learning opportunities for students and educators inspires Idaho's future.



Professional Development – Bringing relevant Idaho STEM topics to educators and providing them with the training and materials they need to engage their students in these vital topics and skills.



Student Competitions – Showcasing project-based student solutions to Idaho-relevant challenges.



Grant Opportunities – Supporting greater access to STEM learning opportunities that support individualized solutions for Idaho's communities.



Awareness Building, Partnerships, and Initiatives – Increasing awareness of the need for Science, Technology, Engineering and Math for Idaho communities, building partnerships with industry and institutions for greater access to STEM learning opportunities, and developing a STEM-literate Idaho.

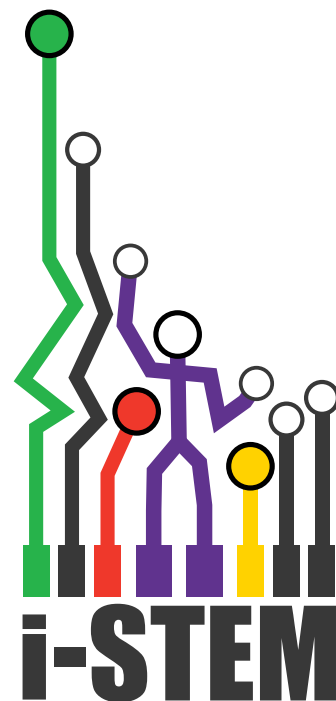


i-STEM

PreK - 12 EDUCATORS

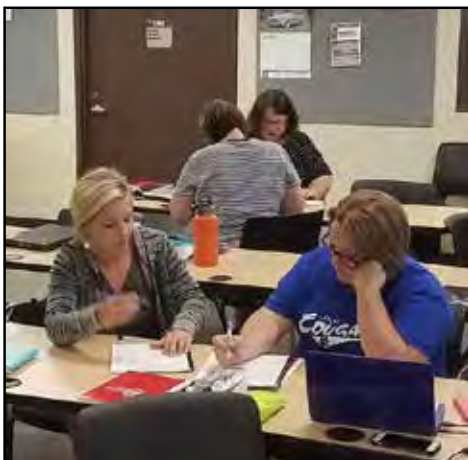
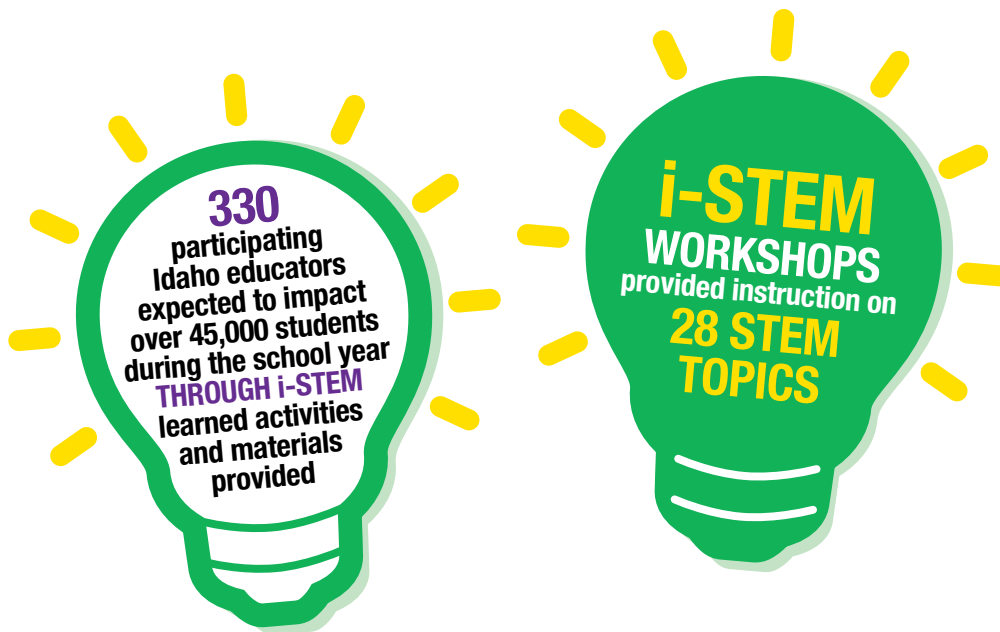
The Foundation of STEM-literacy

High-quality, relevant, and hands-on STEM opportunities for PreK-12 Idaho educators at 6 regional locations throughout Idaho. i-STEM provides content and materials focused on Idaho topics and interests to inspire educators and students, who are important contributors to Idaho's current and future economy. Educators take valuable skills and materials back to their teaching environments from their 4-day institute workshops on topics including: 3-D design and printing, robotics teambuilding and coding, engineering and circuitry, environmental studies and biology, energy production, geology and mining. i-STEM is building the foundation for a STEM-ready Idaho by elevating the student potential through a network of STEM-capable educators.



"i-STEM addresses industry's need for good problem solvers coming into the workforce. This is an exciting opportunity to connect our energy-related topics with project-based learning that these teachers will take back to their students."

– Denise Humphreys,
Idaho Power





INDEEDS

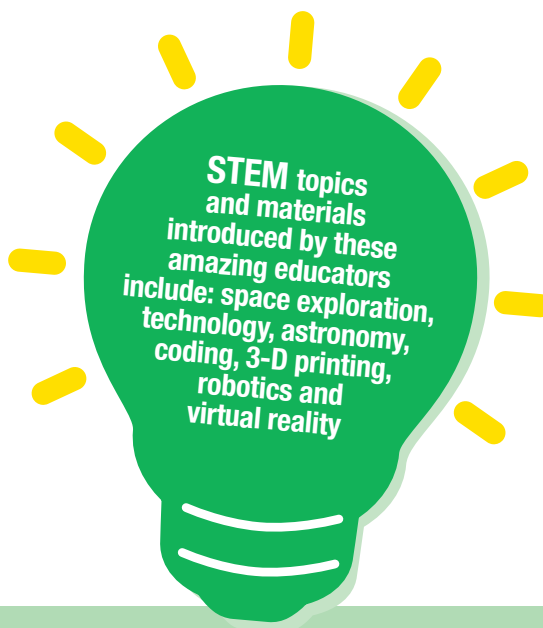
K - 12 EDUCATORS



INDUSTRY'S EXCELLENT EDUCATORS DEDICATED TO STEM

Everyone remembers the educator that made a difference.

The Industry's Excellent Educator Dedicated to STEM (INDEEDS) Award is given to two Idaho educators who create unique opportunities for students to experience the fun and excitement of STEM by integrating real-world experiences and hands-on activities into the classroom, including relevant industry connections. Winners are selected by an industry professional for two categories: K-6th grade and 7th-12th grade. Educators are awarded \$2,000 and another \$2,000 for STEM initiatives at their schools courtesy of sponsors. The awarded educators also attend a STEM-related national conference.



2018 INDEEDS Award winners Laura Wommack of Plummer and John Barenberg of Marsing. Awards were presented at Idaho Technology Council Hall of Fame and Idaho Innovation Awards Gala.



"Teaching STEM subjects at the secondary level in rural districts can inspire kids to go on to better-paying and highly valued STEM careers. I work hard to ensure my students and their parents have as many opportunities as kids in other places have."

– Laura Wommack



"Kids are so curious and like to tinker and click and try things to see what happens. Making observations is the fundamental step of the scientific method, and virtual reality, augmented reality, robotics, coding and devices like tablets and Chromebooks bring learning to life and allow kids to play with things and build things and see how it all works and interacts."

– John Barenberg



VR4ED

MIDDLE – HIGH SCHOOL

Next-level coding program

Idaho is on the cutting edge in VR technology development. From remote job training, hands-on-health applications, and empathy training to architectural design touring, VR is reframing our world and how we live in it.



The VR4Ed Coding Program is an educator professional development and student computer science education program crafted specifically for Idaho middle and high schools. Educator training provides familiarity with the program materials, 12 lesson plans to effectively instruct 3D coding on the Blocksmith platform, and an understanding of how to utilize the Virtual Reality hardware to immerse into student-built worlds or games. Educator teams guide their students through a multi-week virtual design challenge, incorporating a pre-determined theme.

Students learn logical processing, coding language, and graphics applying these skills to real-world applications through guided challenges in the Blocksmith VR platform. Participants will be able to enter the worlds they design through the use of VR viewing tools, incorporating industry perspectives into their work, and submitting projects for a virtual showcase.





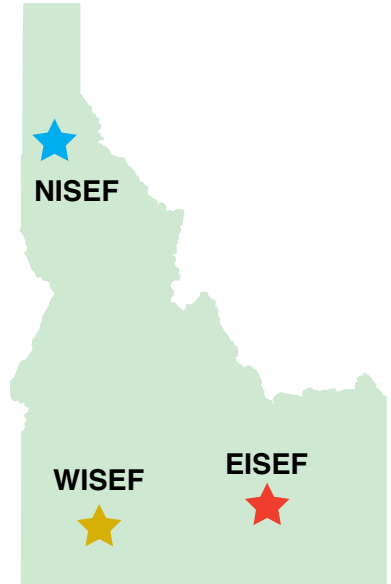
ISEF

HIGH SCHOOL



STEM Peers, STEM-Inspired Careers

Each spring, Idaho STEM Action Center and its partners proudly host three regional high school science and engineering fairs for students across Idaho. These fairs offer students the opportunity to engage in original STEM research projects aligned with their interests and present their findings at the Northern, Western, or Eastern Idaho Science and Engineering Fair. Students exchange ideas and learn with other motivated students in their area at an institute of higher education.



REGIONAL
participation
has grown by
nearly **400%**
since ISEF's
beginning 2017

72%
of students plan
to use the skills
they learned
in their
**FUTURE
EMPLOYMENT**

74%
of students plan
to continue
STEM research
in the future
as a result of
participating in
ISEF

Representative teams from each region are selected to attend and compete in the Intel International Science and Engineering Fair (Intel ISEF).

JUDGING CRITERIA:

1. Research Question
2. Design and Methodology
3. Execution: Data Collection Analysis/Interpretation (Science Projects) or Construction/Testing (Engineering Projects)
4. Creativity
5. Presentation
 - a. Poster
 - b. Interview





Jr. Botball and Botball

JR. BOTBALL – ELEMENTARY
BOTBALL – MIDDLE – HIGH SCHOOL

High-level computer science skills applied to hands-on, tangible projects

Through creativity and collaboration, teams use coding and robotics to perform tasks and solve competitive challenges. Educators engage in professional development to learn robotics skills, teach these skills with materials to students, and coach student competitive robotics teams. Winning teams may travel to statewide and global competitions.



Jr. Botball and Botball Competitions successes

- Team participants see more possibilities for themselves in Computer Science
- An Idaho team won first place in 2018 at the international Jr. Botball Competition
- Student teams in grades 3-6 learn and use the C programming language - the same material in a college introductory computer science course.

“Students have tried to think of other ways in which their experience in robotics can help their community. For instance, one student is from a family that runs a dairy. He was thinking of ways in which he could use coding to make his family’s business run more efficiently...and he’s only 10!”
– Magic Valley educator





Idaho Exhibition of Ideas

GRADES 5-9



What happens when you mix student innovation with 21st century skills?

Formally FabSLAM, IDX engages youth in identifying, designing, prototyping, testing, and iterating solutions to real-world problems. Educators first receive three days of professional development and then return to coach students through a multi-week digital fabrication challenge, including proper online documentation of their process and encouraging multiple design iterations throughout the challenge. Teams then present their work at the IDX Student Showcase Event, judged by a panel of industry professionals on creativity, iteration, design, and other criteria. IDX supports critical and creative thinking, problem solving, innovation, and collaboration. Idaho STEM Action Center hosts three competitions statewide.

- IDX directly impacts 2,267 students, educators and community members annually
- 42 Idaho schools, libraries, and out-of-school networks participate annually
- Winner of the 2016 Western Regional student competition was selected to serve on the White House Science Advisory Committee to shape STEM Education

NORTHERN IDAHO

1st Place 2019

Southside Elementary, Cocolalla

WESTERN IDAHO

1st Place 2019

Murtaugh School District,
Murtaugh

EASTERN IDAHO

1st Place

Newcomer Center at Robert Stuart
Middle School, Twin Falls



LEVELING THE PLAYING FIELD

Idaho STEM Action Center supports communities, schools, libraries, and other organizations to create STEM learning opportunities with locally-driven, self-determined programming.



Family STEM/Career Grant

This grant aims to improve student and parent awareness of local STEM education and career opportunities by providing support to schools that host STEM career events.

Camp & Out-of-School Grant

This grant provides high-quality STEM learning experiences outside of traditional classroom time to encourage sustained participation in and engagement with tangible STEM/21st-Century skills and proficiencies, as well as building local communities of learning for STEM. Priority is given to camps serving underrepresented populations in STEM.

Student Competition Travel Grant

Travel funds for students attending national competitions (ISEF, FIRST Robotics, Junior Botball)

Grant and Sponsorship Awards created 500,623 total impacts in 2018 in Idaho

STUDENT	- 182,105
EDUCATOR	- 15,202
COMMUNITY	- 238,619

DEMAND FOR FUNDING
support is
2X THE AMOUNT
available to award

Visit <https://stem.idaho.gov/apply/> for all Grant Opportunities



EARLY STEM

BIRTH TO AGE 8



BOISE STATE UNIVERSITY



A Groundbreaking Idaho Initiative

Children have an innate drive to make sense of their world and their ability to construct knowledge alongside engaged adults. Research has confirmed that the brain is particularly receptive to learning math and logic between the ages of 1 and 4, and that early math skills are the most powerful predictors of later learning. The STEM Action Center is supporting early STEM learning in Idaho through partnerships, projects and professional development opportunities.

FamLAB Project supports work in Idaho to create an ecosystem that encourages and fosters children's learning across settings, especially children from underrepresented populations. Grant funding generously provided to Idaho STEM Action Center by Joan Ganz Cooney Center at Sesame Workshop

Boise State University College of Education and the Children's Center Partnerships an exciting multi-year project to advance STEM learning for ages 0 to 8. Through professional development and instructional coaching, early childhood professionals are learning how to engage children with and without disabilities in inclusive STEM learning environments.

Early STEM Professional Development Workshops allow early childhood practitioners to dive deeper into hands-on inquiry-based learning, the engineering design process, and work to build a community of practice with fellow attendees.





EVENTS

BUILDING AWARENESS IN IDAHO'S COMMUNITIES



The STEM Action Center and partners bring STEM Day to the Western Idaho Fair each year to provide hands-on STEM fun to families. From virtual reality headsets to robotics and Early STEM, this is an exciting STEM showcase to inspire curiosity in all ages. STEM is everywhere!

Photos by Otto Kittinger



STEM Day at the Fair



Hundreds of Idahoans converge on the State Capitol for STEM Matters Day each January to explore and celebrate innovations in science, technology, engineering, and mathematics learning. This annual event, organized by the Idaho STEM Action Center, attracts students, educators, elected officials, businesses, and STEM advocates from across the state.

STEM Matters at the Capitol





PUBLIC-PRIVATE-PARTNERSHIPS - “P3”

Leveraging STEM support to a new level

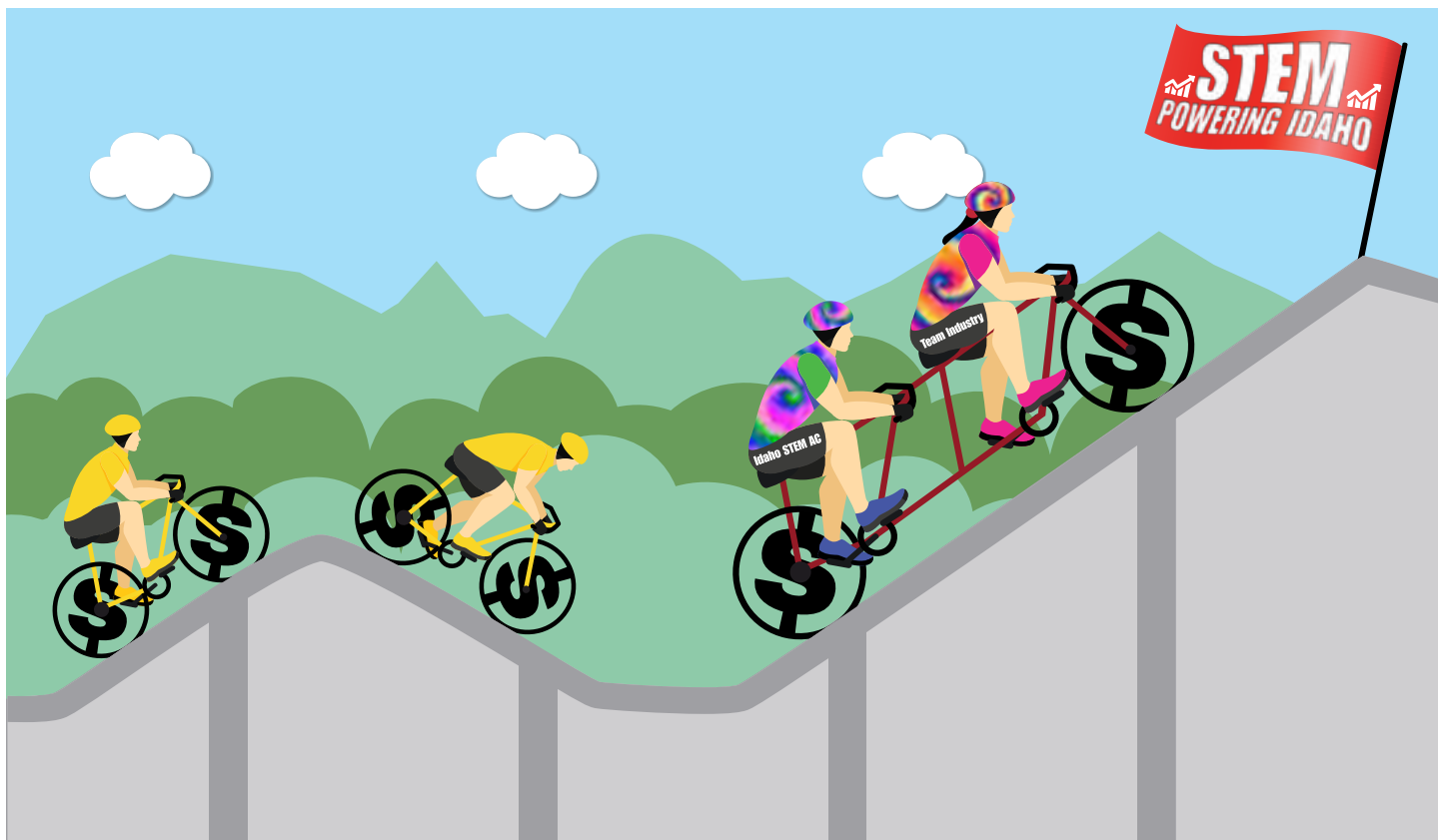
Idaho businesses generously support their communities with sponsorships, program funding, and in a variety of other ways. Are you supporting an organization that is working to create access to STEM learning opportunities? The STEM Action Center may match up to 50% of a sponsor’s donation to that non-profit, school, museum or other qualifying organization and partnered with industry to provide 17 P3 awards during the 2018-2019 school year.

P3 funding brings opportunities such as

- Maker spaces
- Mentorship programs
- Community events
- STEM camps
- Robotics teams

P3 funding brings support to organizations such as

- 4-H clubs
- Girl Scouts
- Community museums and libraries
- Big Brothers Big Sisters
- Jr. Achievement and more!



Our leading P3 partners





YOU CAN SUPPORT STEM EDUCATION

Volunteer

- Judge a competition
- Review STEM grant applications
- Provide a tour of your business
- Be a STEM professional guest speaker
- Mentor a student project

Sponsor an Event or Program

- Student competitions
- Professional Development
- Grants
- Public-Private-Partnerships “P3” support your organization of choice and provide STEM AC matching funds
- Teacher Externship Program



INVESTMENTS

IDAHO STEM ACTION CENTER AND INDUSTRY PARTNERS INVEST TO BUILD A STEM-LITERATE, WORKFORCE READY IDAHO

The Idaho STEM Action Center is able to award only 66% of competitive funding opportunities



July 2018 - July 2019

- Grant Funding \$658,000
- Public Private Partnership \$1,200,000
- Professional Development \$1,143,300
- Student Competitions \$260,000
- STEM Sponsorships \$893,000



IDAHO STEM ACTION CENTER FOUNDATION

MISSION

To raise and distribute funds for STEM education opportunities in Idaho for educators, students, and communities.

Idaho STEM Action Center Foundation is a 501c3 non-profit organization founded to provide an additional giving option for funding and in-kind partners. All funding supports Idaho STEM Action Center programs.

TIMELINE



**Founded in
September 2017**



**501c3 status in
April 2018**



**Funds raised
FY18 \$217K**



**Funds raised FY19
\$483K**

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